

NOTES ON SOME AUSTRALIAN PIPE-FISHES.

By ALLAN R. McCULLOCH, Zoologist, Australian Museum.

I. The remarkable sexual dimorphism of *STIGMATOPHORA NIGRA*, Kaup.

(Figures 1-3.)

During the recent Easter encampment of the Field Naturalists' Club of Tasmania, a small collection of fishes was made which includes two species of *Stigmatophora*, *S. argus*, Richardson and *S. nigra*, Kaup. They are each represented by ovigerous females and males with their pouches filled with more or less developed eggs. The specimens of *S. argus* do not offer any very striking differences in the form of the body in the two sexes, but in *S. nigra* the male is subcylindrical and almost without ornamentation, while his mate is broad and depressed, with rich pink and black markings. They are so dissimilar in their appearance that one can only be sure of their specific identity after a critical comparison of all their characters.

As is usual in the family *Syngnathidae*, the males each have a well-developed brood-pouch, which is placed on the lower surface of the tail behind the vent (fig. 3). It opens along the median-line, and eggs, or young in an advanced stage of development can be seen within. The latter are closely curled within the egg-capsules, but when extracted and laid out straight they measure about 11 mm. in length. They have large heads with enormous black eyes, and their snouts are very short and broad; their bodies are transversely banded with bars of blackish pigment spots. The females, on the other hand, have no brood pouches, but if the abdomen be opened, ovaries containing large eggs are seen on either side of the body near the vent.

STIGMATOPHORA NIGRA, Kaup.

Stigmatophora nigra, Kaup, Cat. Lophobr. Fish. Brit. Mus., 1856, p.53. *Id.*, Gunther, Brit. Mus. Cat. Fish., viii., 1870, p.190. *Id.*, Castelnau, Proc. Zool. Soc. Vict., i., 1872, p.201, and ii., 1873, p.39. *Id.*, Castelnau, Vict. Offic. Rec. Philad. Exhib., 1875, p.48, and Proc. Linn. Soc. N.S. Wales, iii., 1879, p.355. *Id.*, Macleay, Proc. Linn. Soc. N.S. Wales, vi., 1881, p.207. *Id.*, Johnston, Proc. Roy. Soc. Tasm., 1882 (1883) p. 134, and 1890 (1891), p.37. *Id.*, Duncker, Faun. Sudwest-Austr., ii., 1909, p.239. *Id.*, Ogilby, Mem. Qld. Mus., i., 1912, p.36.

Stigmatophora boops, Castelnau, Proc. Zool. Soc. Vict., i., 1872, p. 203. *Id.*, Macleay, Proc. Linn. Soc. N.S. Wales, vi., 1881, p.298.

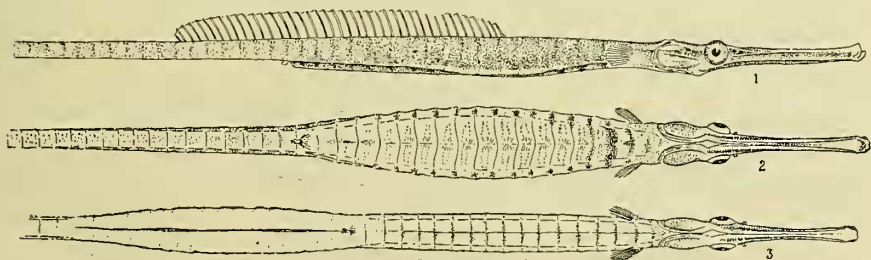


Fig. 1. Side view of female.

Fig. 2. Ventral surface of female.

Fig. 3. Ventral surface of male.

D.36-43. Body segments 16-18. Head 2.3-2.8 in the length from the tip of the snout to the vent. Head and body 1.3-1.7 in the tail; the latter longer in males than in females. Snout 0.6-1.0 longer than the rest of the head. Dorsal fin placed on eleven or twelve body-rings, and six to eight tail rings; the position of the vent is well behind the middle of its length. Pectoral short and broad, a little longer than the eye, which is half or slightly less than half the postorbital portion of the head. A minute anal fin is present in both sexes. Operculum crossed by a horizontal ridge. Nostrils close together, near the eye, the anterior tubular. Snout with a few raised ridges, none of which are prominent.

Male.—Body subcylindrical, scarcely broader than deep, with the angular ridges but little elevated. The pouch is large, and occupies fifteen to eighteen tail-rings. Colour: pale green, closely speckled with microscopic black dots. Each segment of the abdomen with a more or less distinct patch of black dots on the median line. Lower surface of snout with two longitudinal dark bars extending backward to behind the eye.

Female.—Body strongly depressed, adults being twice as broad as deep; the sides are produced outwards into a sharp edge. The other angular ridges are but little elevated as in the male. Colour: upper surface pale green closely speckled with microscopic black dots which are largest on the sides where they almost coalesce. Outer edge of expended sides and abdomen deep pink, the latter crossed by pale blue lines which bear minute black dots. Breast with one or two broad dark cross-bars which are represented on each abdominal segment by a black dot placed near the margin on either side. Tip of snout white, chin pink; lower surface of snout with two dark longitudinal bars extending back behind the eyes.

S. argus differs from the specimens described above in having a much larger number of dorsal rays, and the vent being placed under or before the middle of the dorsal fin. The snout is also more than twice as long as the rest of the head, and the colour marking is very different.

Locality.—Thouin or Wineglass Bay, Tasmania, 11 fathoms; 13th April, 1914.

II. Description of a new genus and species.

Genus *HISTIOGAMPHELUS*, gen. nov.

This genus differs from *Syngnathus* chiefly in the development of a high ridge on the upper surface of the short snout. Dorsal placed above the vent, its base elevated above the back. Tail longer than the head and body, quadrangular, with a well developed caudal fin. Large pectorals and a minute anal fin present. Upper ridge of the body not continuous with that of the tail, which overlaps but does not join the mediolateral ridge. Latero-inferior ridge of the body continuous with that of the tail. No ridge on the operculum.

Type.—*H. briggsii*, sp. nov.

HISTIOGAMPHELUS BRIGGSII, sp. nov.

(Fig. 4.)

D.23; P.13; C.10; Body-rings 22; Tail-rings 36. Head 4.6 in the length from the tip of the snout to the vent. Snout three-fifths as deep as long, 1.1 in the remaining part of the head. Eye 2.5 in the snout. Tail 0.3 longer than the head and body. Caudal fin 3 in the head.

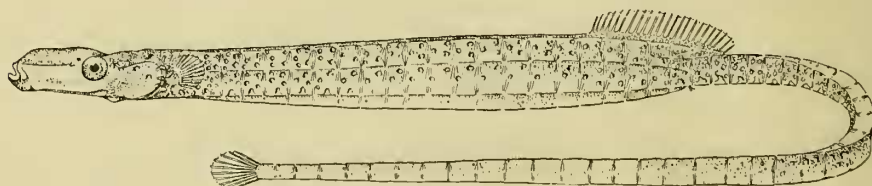


Fig. 4.

Body with seven distinct but smooth ridges, the abdominal one being very prominent. The latero-superior pair terminate at the hinder base of the dorsal fin. The medio-lateral ridges extend backward to the last body ring, and terminate beneath the anterior ends of the upper caudal edges. The latero-inferior body ridges join the lower caudal edges. The body is much deeper than wide, its greatest depth being somewhat before the dorsal fin; the back is slightly convex so that the base of the dorsal is elevated.

Snout short and thick. The median elevated ridge commences on the upper lip, and extends back to above the middle of the eye; it is thin and flexible, and its upper margin is entire and slightly concave. A low smooth ridge defines the lower margin of the snout on either side. Nostrils close together near the eye, the anterior tubular. Top of head and nape with a very low ridge which is lost on the first body ring. Operculum with fine radiating striae.

Dorsal fin placed above five body rings, and two tail rings. Pectoral and caudal well developed; a minute anal fin is also present.

Colour.—Rich orange brown, with numerous dark edged, blue ocelli

Described from an adult female 235 mm. long, which is deposited in the Tasmanian Museum.

Locality.—Dredged in eleven fathoms in Thouin or Wineglass Bay on the east coast of Tasmania; 13th April, 1914. Collected by Mr. E. A. Briggs, after whom the species is named.

HISTIOGAMPHIELUS CRISTATUS, Macleay.

Leptoichthys cristatus, Macleay, Proc. Linn. Soc. N.S. Wales, vi., 1881, p.296.

Leptoichthys (?*Doryrhamphus*) *cristatus*, Duncker, Faun. Sudwest-Austr., ii., 1909, p.234.

I have examined the type of this species in the Macleay Museum, and have little doubt that it is generally identical with *H. briggsii*. It is in very bad condition, being largely decayed, and the anterior half of the head and the abdomen are entirely lost. So far as can be ascertained, it agrees with Macleay's description in all but one detail; instead of the upper edge of the body passing that of the tail by one ring as described, they really overlap on two and a half rings. The medio-lateral ridge and the upper caudal edge terminate on the same ring, the latter being over the other. Length from posterior margin of operculum to vent 40 mm.; vent to base of caudal fin 57½ mm.

Locality.—West Australia.
